

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Terra Mississippi Nitrogen, Inc.
Donaldsonville Facility
Donaldsonville, Ascension Parish, Louisiana
Agency Interest Number: 2245
Activity Number: PER20050010
Proposed Permit Number: 0180-00009-V1**

I. APPLICANT

Company:

Terra Mississippi Nitrogen Inc - Donaldsonville Facility
PO Box 310
Donaldsonville, Louisiana 70346-0310

Facility:

Terra Mississippi Nitrogen Inc
39139 Hwy 18 W
Donaldsonville, Ascension Parish, Louisiana
Latitude 30°06'12"; Longitude 90°57'09"

II. FACILITY AND CURRENT PERMIT STATUS

Anhydrous ammonia is produced using the Kellogg Process and uses ingredients common in the environment: natural gas, air and water. Under high temperature and in the presence of a catalyst, the substances react to form a gas stream consisting primarily of hydrogen, nitrogen, carbon monoxide, carbon dioxide and other gases. Using a series of catalysts and chemical solutions, all gases are removed with the exception of nitrogen and hydrogen. The commingled nitrogen and hydrogen, called synthesis gas, is then brought in contact with another catalyst under high pressure. The synthesis gas reacts to form ammonia gas. The ammonia gas is then condensed to a liquid using a refrigeration machine. Terra Mississippi Nitrogen, Inc. is capable of producing via the No. 2 Ammonia Plant approximately 1,800 tons of ammonia per day.

The aqua ammonia system is currently permitted to produce 150 tons per day of 29.9% aqua using vapor ammonia. The system operates by routing ammonia vapors to an absorption column. Makeup water from the facility's existing condensate systems circulates through the absorption column to absorb the vapors. Once the concentration of the circulation flow in the column achieves 29.9% aqua ammonia, the product is diverted to a 43,000 gallon storage tank. The product is loaded from there into trucks or rail cars.

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Terra Mississippi Nitrogen Inc - Donaldsonville Facility is a designated Part 70 source. Several Part 70 permits have been issued to the operating units within the complex. These include:

Permit No.	Unit or Source	Date Issued
3076-V0	Aqua Ammonia System	Proposed Permit
3019-V0	Cleaver Brooks Boiler	12/31/2005

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire were submitted by Terra Mississippi Nitrogen, Inc. on July 13, 2005 requesting a Part 70 operating permit. A revised application and Emission Inventory Questionnaire dated February 16, 2009 was submitted by Terra Mississippi Nitrogen which replaced the previously submitted application in its entirety. Additional information associated with the February 2009 application dated March 18, 2009, March 25, 2009 and April 3, 2009 was also received.

Project

With this Title V renewal, Permit No. 0180-00009-V1, the following facilities will be permitted:

- One Ammonia Plant (Plant No. A-II) and all ancillary equipments;
- The truck and rail car loading area and barge/ship loading area from the A-I Ammonia Plant;
- Two 150 horsepower emergency-use Kohler generators.

Various emission sources associated with the No. 1 Ammonia Plant and the Urea Plant are being deleted from the operating permit due to the permanent shutdown of these facilities.

This permit will also incorporate General Title V Permit No. 3076-V0 authorizing the operation of the aqua ammonia production facility. The application for this permit was received March 2, 2009.

Proposed Permit

Permit 0180-00009-V1 will be the renewal and modification of the Part 70 operating permit for the Terra Mississippi Nitrogen, Inc.

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Permitted Air Emissions

Estimated emissions in tons per year are as follows:

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
PM ₁₀	169.2	62.91	-106.29
SO ₂	5.71	3.66	-2.05
NO _x	3,546.7	1311.94	-2234.76
CO	757.8	654.17	-103.63
VOC	138.8	102.69	-36.11

LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
1,3-Butadiene	-	0.002	+0.002
1,4-Dichlorobenzene	-	0.01	+0.01
Acetaldehyde	-	0.02	+0.02
Acrolein	-	0.002	+0.002
Ammonia	2,178.2	169.19	-2009.01
Benzene	0.05	0.07	+0.02
Cadmium	-	0.005	+0.005
Chromium VI (and compounds)	-	0.006	+0.006
Chlorine	-	<0.01	+0.01
Ethyl benzene	<0.01	0.01	0
Formaldehyde	0.73	0.38	-0.35
Methanol	118.93	96.39	-22.54
Methyl Tert Butyl Ether	<0.01	-	-0.01
Naphthalene (and Methyl naphthalenes)	-	0.03	+0.03
Nickel (and compounds)	-	0.009	+0.009
Toluene	<0.01	0.05	+0.04
Xylene (mixed isomers)	<0.01	0.03	+0.02
n-Hexane	-	7.92	+7.92
Total	2297.95	274.134	-2023.82

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IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.